BIRD REMAINS FROM A KENTUCKY INDIAN MIDDEN

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In 1939 bones and artifacts were removed from an Indian midden discovered near Perkins Creek on the Will Rottering farm at Paducah, McCracken County, Kentucky, by Dr. Andrew L. Pickens of Paducah Junior College and Mr. Fain King from Wickliffe (Anonymous, 1939). The midden lay in the path of the proposed Section A of the city floodwall (Scott, 1939), and the material was gathered rapidly and stored in the Junior College. In 1958 and 1961 with the cooperation of Royce H. Gregory, the business manager, and Dr. R. G. Matheson, the president, I removed all the bird bones and some mammal bones and artifacts for study; the remaining material was discarded.

The collection contains specimens of 22 species of birds. Specific identification was based in part on the geographic ranges of living species. The list includes the pied-billed grebe (*Podilymbus podiceps*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), green-winged teal (*Anas carolinensis*), blue-winged teal (*Anas discors*), canvasback (*Aythya valisineria*), lesser scaup (*Aythya affinis*), red-tailed hawk (*Buteo jamaicensis*), greater prairie chicken (*Tympanuchus cupido*), bobwhite (*Colinus virginianus*), turkey (*Meleagris gallopavo*), American coot (*Fulica americana*), passenger pigeon (*Ectopistes migratorius*), screech owl (*Otus asio*), great horned owl (*Bubo virginianus*), barred owl (*Strix varia*), yellow-shafted flicker (*Colaptes auratus*), pileated woodpecker (*Dryocopus pileatus*), red-headed woodpecker (*Melanerpes erythrocephalus*), common raven (*Corvus corax*), common crow (*Corvus brachyrhynchos*), and the family Icteridae, probably the common grackle (*Quiscalus quiscula*).

Of special interest is the occurrence of the partial right humerus of the common raven. According to Mengel (in press) the species was probably once resident through much of the Cumberland Plateau and Mountains, and appeared elsewhere in Kentucky as a vagrant. However, the species disappeared from the state decades ago and no specimen is extant. The bone is larger in shaft width and depth than eleven specimens of *Corvus corax sinuatus* in the University of Kansas Museum of Natural History and is closer to the one specimen of *C. c. principalis,* which is the race to

be expected in Kentucky. The remaining 21 species are all known to occur or have occurred in western Kentucky, although specimens of several, the greater prairie chicken for example, apparently do not exist (Mengel, op. cit.).

Various artifacts from the site were examined by Dr. Berle Clay, Museum of Anthropology, University of Kentucky, who estimated they came from the middle or latter half of the Mississippian Period somewhere between 1300 and 1500 A.D. (letter March 13, 1964). Avian material from the Wickliffe Mounds, located in Ballard County, and of approximately the same age as the Paducah midden was examined by Dr. Paul W. Parmalee (letter March 30, 1964), who identified bones from eight species of birds including the following forms not found at the Paducah site: American widgeon (*Mareca americana*), wood duck (*Aix sponsa*), bald eagle (*Haliaeetus leucocephalus*), and sandhill crane (*Grus canadensis*). The turkey was by far the most abundant bird in the Paducah material. At Wickliffe, however, the species was outnumbered by bones of the mallard or black duck (*Anas rubripes*).

Literature Cited

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A NEW GECKO FROM THE VIRGIN ISLANDS

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During a collecting trip to the Virgin Islands in the summer of 1964 the xeric but wooded hillslopes of Virgin Gorda yielded not only the ubiquitous *Sphaerodactylus macrolepis* Gunther but another, undescribed diminutive species, here named

Sphaerodactylus parthenopion, new species

Type. MCZ 77211 (original number ASFS V3734), an adult female, collected on hillside above Pond Bay, Virgin Gorda, British Virgin Islands, on 12 August 1964, by Richard Thomas (Fig. 1).

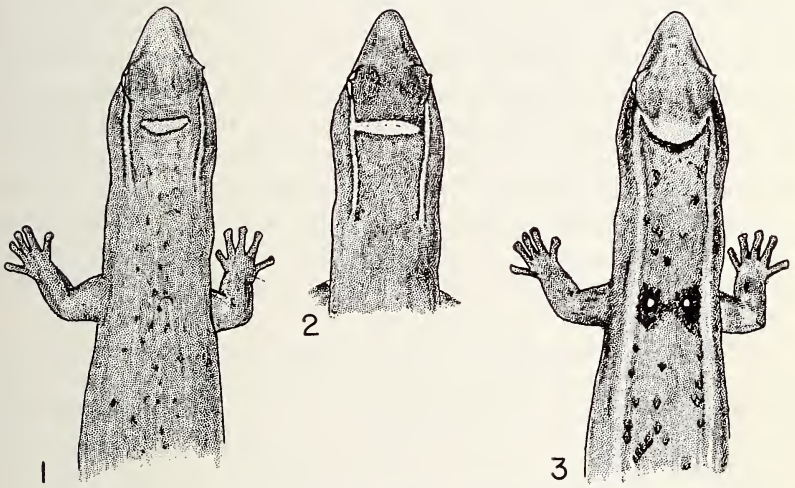

Fig. 1. Dorsal body and head pattern of the type specimen of *Sphaerodactylus parthenopion* (MCZ 77211).

Fig. 2. Variant head pattern of *Sphaerodactylus parthenopion* (ASFS X3658); one specimen has both ends of cephalic bar connected to postocular stripes.

Fig. 3. Dorsal body and head pattern typical of many *Sphaerodactylus nicholsi* (ASFS X4246).

Paratypes. ASFS V3658-59, ca. 0.5 mi. N Pond Bay, 10 August 1964, R. Thomas; ASFS V3664, Pond Bay, 10 August 1964, R. Thomas; ASFS V3681, between Little Dix Bay and Savana Bay, 11 August 1964, R. Thomas; AMNH 92821, ca. 0.5 mi. N Pond Bay, 11 August 1964, R. Thomas; AMNH 92822-24, hillside above Pond

Bay, 12 August 1964, R. Thomas; MCZ 77212-14, ca. 0.5 mi. N Pond Bay, 13 August 1964, R. Thomas; KU 79852-53, between Little Dix Bay and Savana Bay, 15 August 1964, David C. Leber and R. Thomas; KU 79854, SW slope of Gorda Peak, ca. 500′, 16 August 1964, R. Thomas. All above localities are on the island of Virgin Gorda.

Diagnosis. A species of *Sphaerodactylus* characterized by its very small size; small, but keeled and imbricate dorsal scales; lack of a middorsal zone of granules or granular scales; a generally uniform and dark dorsal coloration; lack of scapular or sacral pattern; and a distinctive cephalic pattern as described below.

Distribution. Known only from the island of Virgin Gorda.

Description of type. Dorsal scales small, acute to rounded, moderately keeled and slightly imbricate; 32 scales from axilla to groin counted dorsolaterally. Some crowding and reduction in size of scales middorsally but no zone of granules or granular scales present. Granular scales of top of head and anterior neck becoming flattened and imbricate at mid-neck. Gular and pectoral scales keeled. Ventral scales obtuse to rounded, smooth and imbricate; 28 scales from axilla to groin along midventral line. Scales around midbody 52. Internasals 2; upper labials to middle of eye 3. Lamellae on fourth toe of right foot 8. Dorsal scales of tail acute, keeled, and erect from tail; tail regenerated. Snout-vent length 17 mm.

Dorsal ground color of head and body deep brown. A narrow, dark-edged, yellow-brown postocular stripe extends over each temple and fades out at base of head. A faint, preocular light bar across base of snout. A dark-edged, more or less oval, transverse yellow-brown bar present on top of head just behind eyes, its ends not reaching laterally to postocular stripes. A faint, light occipital spot present. Dorsal body coloration of scattered dark brown or black scales with a slight concentration of dark scales along middorsal line. Dorsa of hindlimbs with irregular mottling of darker scales. Ground color of tail yellowish brown, pattern of irregular short linear or clustered dark elements. Ventral ground color light, grayish to cream. Gular pattern a faint reticulum of dark pigmentation; lateral light areas of gular pattern continuous with light markings on upper labials and temporal region which radiate from eye. Brown dorsal coloration invades venter, fading out centrally except for dark edges to many scales.

Variation. Scalation of the 14 paratypes is much the same as that of the type. Dorsal scales from axilla to groin range from 30-35 in 12 specimens counted. Ventral scales axilla to groin 26-31; scales around midbody 50-55. Throat and pectoral scales are keeled in all but one specimen. Fourth toe lamellae 8 (mode) or 9. Upper labials typically 3 to mid-eye; 4 specimens have only 2 upper labials on one side. In specimens with unregenerated tails the tips of the scales stand out somewhat from the surface of the tail imparting a roughened appearance. Escutcheons of the five adult males vary in length from 3-5 scales and in width from 11-13 scales. Snout-vent lengths vary from 12-18 mm (length of the three largest females).

The coloration of the paratypes is much the same as that of the type. The overall impression of the color of these lizards is that they are a dark, velvety brown. Some specimens have a uniform reticulum of darker scales instead of the irregularly scattered dark scales of the type (the modal coloration); others are a nearly uniform brown with few or no darker scales. The cephalic patterns are also generally much like that of the type; two specimens have the cephalic bar joined at one or both ends with a postocular stripe (Fig. 2). One of these specimens has diffuse, light transverse markings on the neck. The preocular transverse bar is evident in all specimens, albeit faintly is some. The pattern of light lines which radiate from the eye to the underside of the head is more prominent than in the type in half of the paratypes, and as prominent or less so in half. The gular pattern is very faint in some specimens, but in others it is composed of rather prominent linear elements which converge towards the midline from either side and continue posteriorly, ending at the neck.

Comparisons. The most pertinent comparison for the new form is with *Sphaerodactylus nicholsi* Grant, a species presently known only from the southwestern corner of Puerto Rico (Grant, 1931; Albert Schwartz, field data). *S. nicholsi* is similar to *parthenopion* in its small size and related color pattern and is doubtless its closest relative. *S. nicholsi* possesses a crescentic, light-colored cephalic pattern (Fig. 3) which may meet the postocular stripes laterally; this pattern is not present in all specimens. The postocular stripes of *nicholsi* continue onto the body, sacrum and tail with a few exceptions when stripes of any kind are virtually absent. Other than occasional faint dorsolateral stripes on the prox-

imal part of the tail, no specimens of *parthenopion* possess stripes beyond the postocular stripes ending on the neck. About 60 per cent of the specimens of *nicholsi* possess a scapular pattern of two small, light spots surrounded by a zone of black; *nicholsi* also has a dark-edged U- or Y-shaped sacral pattern formed by the confluence of the dorsolateral stripes. S. *parthenopion* possesses neither of these pattern elements. S. *nicholsi* attains a larger size than *parthenopion;* aside from the fact that large specimens attain snout-vent lengths of 20-22 mm (versus a maximum of 18 mm for *parthenopion), nicholsi* is a bulkier lizard in general appearance. S. *parthenopion* is certainly the smallest known *Sphaerodactylus,* and it must rank among the smallest of lizards.

Scalation differences between the two forms are striking and reflect the smaller size of dorsal scales in *parthenopion,* a fact which is evident from mere inspection. Table 1, comparing body scale counts of 12 *parthenopion* with counts taken on 22 specimens of *nicholsi,* suggests the differences in scale size.

TABLE 1

Scale counts of *Sphaerodactylus*

Body scales	S. *nicholsi*	S. *parthenopion*
Dorsal scales axilla to groin	19-24	30-35
Ventral scales axilla to groin	21-26	26-29
Scales around midbody	35-42	50-55

Of the 15 specimens of S. *parthenopion* only one specimen has but a single internasal, the rest having either 2 (mode) or 3. On the other hand, of 41 specimens of S. *nicholsi,* all have a single internasal but 4 which have 2 internasals. Escutcheons of male *nicholsi* attain larger size than do those of *parthenopion,* but there is considerable overlap.

Sphaerodactylus parthenopion may be told from S. *macrolepis* with which it occurs syntopically by the much larger size of the latter (adults 25-30 mm snout-vent) and by the latter's larger and coarser scales. S. *macrolepis* has a pattern of dark lateral stripes and dorsal spotting on a tan or light brown ground color with a boldly black-edged pair of scapular spots (females) or a nearly uniform yellow-brown body color, weak or absent scapular pattern,